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Docket No. 163-689IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
PATENT OPERATION

In re application of:

Giovanni Meazza

Serial No.: 10/573,052

Group Art Unit: 1626

Filing Date: March 22, 2006

Examiner: HAVLIN, ROBERT H

TITLE: DERIVATIVES OF 1,3 DIONES HAVING A HERBICIDAL  
ACTIVITYCommissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

## DECLARATION UNDER 37 CFR§1.132

Sir:

I, Giovanni Meazza, declare that I am a named inventor in the above identified application and that I hold a degree in Chemistry from the University of Milan (Italy).

The compounds listed below have been synthesized and tested under my direction. The tests were carried out to determine the pre-emergence and post-emergence herbicidal properties of the compounds. The tests were carried out according to the procedures of Example 31 (pre-emergence) and 32 (post-emergence) of the above identified application, against the following weeds:

*Abutilon theophrasti* (AT): post  
*Amaranthus retroflexus* (AR): pre  
*Chenopodium album* (CA): pre/post  
*Galium aparine* (GA) : pre/post  
*Ipomea purpurea* (IP): pre  
*Portulaca oleracea* (PO): pre/post  
*Solanum nigrum* (SN): pre/post  
*Stellaria media* (SM): pre/post

The results are reported in Table 1 (pre-emergence) and Table 2 (post-emergence) and are expressed with the following range of values measured as % of herbicidal activity:

0 = 0-10; 1 = 11-30; 2 = 31-50; 3 = 51-70; 4 = 71-90; 5 > 91-100;  
 - = not tested.

Table 1. Pre-emergence herbicidal activity at 500 g/ha.

| Plant species:  | AT | AR | CA | GA | IP | PO | SN | SM |
|-----------------|----|----|----|----|----|----|----|----|
| Compound N° 3:  | 5  | -  | 5  | -  | 5  | 5  | 5  | -  |
| Compound N° 4:  | 5  | -  | 5  | -  | 5  | 5  | 5  | -  |
| Compound N° 5:  | 5  | -  | 5  | -  | 5  | 5  | -  | -  |
| Compound N° 6:  | 5  | 5  | 5  | 5  | 5  | 5  | 5  | 5  |
| Compound N° 7:  | 5  | 5  | 5  | -  | -  | 5  | 5  | 5  |
| Compound N° 8:  | 5  | 5  | 5  | -  | 5  | 5  | -  | -  |
| Compound N° 9:  | 5  | 5  | 5  | -  | 5  | 5  | 5  | 5  |
| Compound N° 10: | 5  | -  | 5  | -  | 5  | 5  | -  | -  |
| Compound N° 11: | 5  | -  | 5  | -  | 5  | 5  | -  | -  |

Continuation of Table 1.

| Plant species:   | AT | AR | CA | GA | IP | PO | SN | SM |
|------------------|----|----|----|----|----|----|----|----|
| Compound N° 12:  | 5  | 5  | 5  | -  | 5  | 5  | 5  | -  |
| Compound N° 13:  | 5  | -  | 5  | -  | 5  | 5  | -  | -  |
| Compound N° 22:  | 5  | 5  | 5  | 5  | 5  | 5  | 5  | 5  |
| Compound N° 27:  | 5  | 5  | 5  | -  | 5  | 5  | -  | -  |
| Compound N° 37:  | 5  | 5  | 5  | -  | 5  | 5  | -  | -  |
| Compound N°152:  | 5  | -  | 5  | -  | 5  | 5  | -  | -  |
| Compound N°400:  | 5  | 5  | 5  | -  | 5  | 5  | -  | -  |
| Compound N°460:  | 5  | -  | 5  | -  | 5  | 5  | -  | -  |
| Compound N°515:  | 5  | -  | 5  | -  | 5  | 5  | -  | -  |
| Compound N°616:  | 5  | 5  | 5  | -  | 5  | 5  | -  | -  |
| Compound N°650:  | 5  | -  | 5  | -  | 5  | 5  | -  | -  |
| Compound N°970:  | 5  | -  | 5  | -  | 5  | 5  | -  | -  |
| Compound N°973:  | 5  | 5  | 5  | -  | 5  | 5  | 5  | -  |
| Compound N°975:  | 5  | -  | 5  | -  | 5  | 5  | -  | -  |
| Compound N°1111: | 5  | 5  | 5  | -  | 5  | 5  | 5  | -  |
| Compound N°1242: | 5  | -  | 5  | -  | 5  | 5  | -  | -  |
| Compound N°1336: | 5  | 5  | 5  | -  | 5  | 5  | 5  | -  |
| Compound N°1342: | 5  | -  | 5  | -  | 5  | 5  | -  | -  |
| Compound N°1474: | 5  | 5  | 5  | -  | 5  | 5  | 5  | 5  |
| Compound N°2077: | 5  | 5  | 5  | -  | 5  | 5  | 5  | -  |

Continuation of Table 1.

| Plant species:   | AT | AR | CA | GA | IP | PO | SN | SM |
|------------------|----|----|----|----|----|----|----|----|
| Compound N°2200: | 5  | 5  | 5  | -  | 5  | 5  | 5  | 5  |
| Compound N°2201: | 5  | -  | 5  | -  | 5  | 5  | -  | -  |
| Compound N°2425: | 5  | 5  | 5  | -  | 5  | 5  | 5  | -  |
| Compound N°2918: | 5  | -  | 5  | -  | 5  | 5  | -  | -  |
| Compound N°2920: | 4  | -  | 4  | -  | 5  | 5  | -  | -  |
| Compound N°2921: | 5  | 5  | 5  | -  | 5  | 5  | -  | -  |
| Compound N°2922: | 5  | 5  | 5  | -  | 5  | 5  | 5  | -  |
| Compound N°2923: | 5  | 5  | 5  | -  | 5  | 5  | 5  | -  |

Table 2. Post-emergence herbicidal activity at 500 g/ha.

| Plant species: | AT | CA | GA | PO | SN | SM |
|----------------|----|----|----|----|----|----|
| Compound N° 3: | 5  | -  | 5  | -  | 5  | -  |
| Compound N° 4: | 5  | -  | 5  | -  | 5  | -  |
| Compound N° 5: | 5  | -  | 5  | 5  | 5  | -  |
| Compound N° 6: | 5  | 5  | 5  | 5  | 5  | 5  |
| Compound N° 7: | 5  | 5  | 5  | 5  | -  | 5  |
| Compound N° 8: | 5  | 5  | 5  | -  | 5  | 5  |
| Compound N° 9: | 5  | 5  | 5  | -  | 5  | 5  |

Continuation of Table 2.

| Plant species:   | AT | CA | GA | PO | SN | SM |
|------------------|----|----|----|----|----|----|
| Compound N° 10:  | 5  | -  | 5  | -  | 5  | 5  |
| Compound N° 11:  | 5  | 5  | -  | -  | 5  | -  |
| Compound N° 12:  | 5  | 5  | 5  | 5  | 5  | 5  |
| Compound N° 13:  | 5  | -  | 5  | -  | 5  | 5  |
| Compound N° 22:  | 5  | 5  | 5  | 5  | 5  | 5  |
| Compound N° 27:  | 5  | 5  | 5  | -  | 5  | 5  |
| Compound N° 37:  | 5  | 5  | 5  | -  | 5  | 5  |
| Compound N° 152: | 5  | -  | 5  | -  | 5  | 5  |
| Compound N° 400: | 5  | 5  | 5  | -  | 5  | 5  |
| Compound N° 460: | 5  | -  | 5  | -  | 5  | 5  |
| Compound N° 515: | 5  | -  | 5  | -  | 5  | 5  |
| Compound N° 616: | 5  | 5  | 5  | 5  | 5  | 5  |
| Compound N° 650: | 5  | -  | 5  | -  | 5  | 5  |
| Compound N° 970: | 5  | -  | 5  | -  | 5  | 5  |
| Compound N° 973: | 5  | 5  | 5  | 5  | 5  | 5  |
| Compound N° 975: | 5  | -  | 5  | -  | 5  | -  |
| Compound N°1111: | 5  | 5  | 5  | 5  | 5  | 5  |
| Compound N°1242: | 5  | -  | 5  | -  | 5  | 5  |
| Compound N°1336: | 5  | 5  | 5  | 5  | 5  | -  |
| Compound N°1342: | 5  | -  | 5  | 5  | 5  | 5  |
| Compound N°1474: | 5  | 5  | 5  | 5  | 5  | 5  |

Continuation of Table 2.

| Plant species:   | AT | CA | GA | PO | SN | SM |
|------------------|----|----|----|----|----|----|
| Compound N°2077: | 5  | -  | 5  | -  | 5  | -  |
| Compound N°2200: | 5  | 5  | 5  | 5  | 5  | 5  |
| Compound N°2201: | 5  | -  | 5  | -  | 5  | 5  |
| Compound N°2425: | 5  | 5  | 5  | -  | 5  | 5  |
| Compound N°2918: | 5  | 5  | 5  | -  | 5  | 5  |
| Compound N°2920: | 4  | 3  | 4  | 4  | 3  | 3  |
| Compound N°2921: | 5  | 5  | 5  | 5  | 5  | 5  |
| Compound N°2922: | 5  | 5  | 5  | 5  | 5  | 5  |
| Compound N°2923: | 5  | -  | 5  | -  | 5  | 5  |

The compounds tested were:

Compound N° 3: 2-(5-*tert*-butyl-1,3,4-oxadiazol-2-yl)-1-(4-chlorophenyl)-3-(cyclopropyl)propane-1,3-dione;

Compound N° 4: 1-(4-chlorophenyl)-3-cyclopropyl-2-(2-methyl-2*H*-tetrazol-5-yl)propane-1,3-dione;

Compound N° 5: 1-(4-chlorophenyl)-3-cyclopropyl-2-(1-methyl-1*H*-tetrazol-5-yl)propane-1,3-dione;

Compound N° 6: 1-[2-chloro-4-(methylsulfonyl)phenyl]-3-cyclopropyl-2-(2-methyl-2*H*-tetrazol-5-yl)propane-1,3-dione;

Compound N° 7: 1-[2-chloro-4-(methylsulfonyl)phenyl]-3-cyclopropyl-2-(1-methyl-1*H*-tetrazol-5-yl)propane-1,3-dione;

Compound N° 8: 1-[4-chloro-2-nitrophenyl]-3-cyclopropyl-2-(1-methyl-1*H*-tetrazol-5-yl)propane-1,3-dione;

Compound N° 9: 3-cyclopropyl-1-[4-(methylsulfonyl)-2-nitrophenyl]-2-(2-methyl-2*H*-tetrazol-5-yl)propane-1,3-dione;

Compound N° 10: 1-[2-chloro-4-(methylsulfonyl)phenyl]-3-cyclopropyl-2-(4-methyl-1,3-thiazol-2-yl)propane-1,3-dione;

Compound N° 11: 1-[2-chloro-4-(methylsulfonyl)phenyl]-3-cyclopropyl-2-(3-methyl-1,2,4-oxadiazol-5-yl)propane-1,3-dione;

Compound N° 12: 1-[4-chloro-2-nitrophenyl]-3-cyclopropyl-2-(3-methyl-1,2,4-oxadiazol-5-yl)propane-1,3-dione;

Compound N° 13: 1-[2-chloro-4-(methylsulfonyl)phenyl]-3-cyclopropyl-2-(pyridin-2-yl)propane-1,3-dione;

Compound N° 22: 3-cyclopropyl-1-[4-(methylsulfonyl)-2-nitrophenyl]-2-(3-methyl-1,2,4-oxadiazol-5-yl)propane-1,3-dione;

Compound N° 27: 3-cyclopropyl-1-[4-(methylsulfonyl)-2-nitrophenyl]-2-(3-trifluoromethyl-1,2,4-oxadiazol-5-yl)propane-1,3-dione;

Compound N° 37: 3-cyclopropyl-1-[4-(methylsulfonyl)-2-nitrophenyl]-2-(5-methyl-1,2,4-oxadiazol-3-yl)propane-1,3-dione;

Compound N° 152: 3-cyclopropyl-1-[4-(methylsulfonyl)-2-nitrophenyl]-2-(3-methyl-1,2,4-thiadiazol-5-yl)propane-1,3-dione;

Compound N° 400: 1-[2-chloro-4-(methylsulfonyl)phenyl]-3-cyclopropyl-2-(5-methyl-1,2,4-oxadiazol-3-yl)propane-1,3-dione;

Compound N° 460: 1-[2-chloro-4-(methylsulfonyl)phenyl]-3-cyclopropyl-2-(1,2,4-triazol-1-yl)propane-1,3-dione;

Compound N° 515: 1-[2-chloro-4-(methylsulfonyl)phenyl]-3-cyclopropyl-2-(3-methyl-1,2,4-thiadiazol-5-yl)propane-1,3-dione;

Compound N° 616: 1-[2-chloro-4-(methylsulfonyl)phenyl]-2-(pyridin-2-yl)-3-(trifluoromethyl)propane-1,3-dione;

Compound N° 650: 1-[2-chloro-4-(methylsulfonyl)phenyl]-3-cyclopropyl-2-(pyrimidin-4-yl)propane-1,3-dione;

Compound N° 970: 1-[2-chloro-4-nitrophenyl]-3-cyclopropyl-2-(2-methyl-2H-tetrazol-5-yl)propane-1,3-dione;

Compound N° 973: 1-[4-chloro-2-nitrophenyl]-3-cyclopropyl-2-(2-methyl-2H-tetrazol-5-yl)propane-1,3-dione;

Compound N° 975: 3-cyclopropyl-1-[2,4-dinitrophenyl]-2-(2-methyl-2H-tetrazol-5-yl)propane-1,3-dione;

Compound N° 1111: 3-cyclopropyl-1-[2-(methylsulfonyl)-4-(trifluoromethyl)phenyl]-2-(3-methyl-1,2,4-oxadiazol-5-yl)propane-1,3-dione;

Compound N° 1242: 1-[2-(methylsulfonyl)-4-(trifluoromethyl)phenyl]-2-(3-methyl-1,2,4-thiadiazol-5-yl)-3-(trifluoromethyl)propane-1,3-dione;

Compound N° 1336: 3-cyclopropyl-1-[2-(methylsulfonyl)-4-trifluoromethylphenyl]-2-(2-methyl-2H-tetrazol-5-yl)propane-1,3-dione;

Compound N° 1342: 1-[2-(methylsulfonyl)-4-(trifluoromethyl)phenyl]-2-(pyridin-2-yl)-3-(trifluoromethyl)propane-1,3-dione;

Compound N° 1474: 1-[3-chloro-5-(trifluoromethyl)pyridin-2-yl]-3-cyclopropyl-2-(3-methyl-1,2,4-oxadiazol-5-yl)propane-1,3-dione;

Compound N° 2077: 3-cyclopropyl-1-(2,4-dimethylthiazol-5-yl)-2-(pyridin-2-yl)propane-1,3-dione;

Compound N° 2200: 3-cyclopropyl-1-[3-(4,5-dihydroisoxazol-3-yl)-2-methyl-4-(methylsulfonyl)phenyl]-2-(3-methyl-1,2,4-oxadiazol-5-yl)propane-1,3-dione;



Compound N°2201: 1-[3-(4,5-dihydroisoxazol-3-yl)-2-methyl-4-(methylsulfonyl)phenyl]-2-(3-methyl-1,2,4-oxadiazol-5-yl)-3-(trifluoromethyl)propane-1,3-dione;

Compound N°2425: 3-cyclopropyl-1-[3-(4,5-dihydroisoxazol-3-yl)-2-methyl-4-(methylsulfonyl)phenyl]-2-(2-methyltetrazol-5-yl)

Compound N°2918: 1-[2-chloro-4-(methylsulfonyl)phenyl]-3-cyclopropyl-2-(5-trifluoromethyl-1,3,4-thiadiazol-2-yl)propane-1,3-dione;

Compound N°2920: 2-(*tert*-butyl-1,3,4-oxadiazol-5-yl)-1-(4-chlorophenyl)-3-(trifluoromethyl)propane-1,3-dione;

Compound N°2921: 3-cyclopropyl-2-(2-methyltetrazol-5-yl)-1-(2-methyl-6-trifluoromethylpyridin-3-yl)propane-1,3-dione;

Compound N°2922: 3-cyclopropyl-1-(2-methoxyethoxymethyl-6-trifluoromethylpyridin-3-yl)-2-(2-methyltetrazol-5-yl)propane-1,3-dione;

Compound N°2923: 1-[2-chloro-4-(methylsulfonyl)phenyl]-3-cyclopropyl-2-(2,5-dioxopyrrolidin-1-yl)propane-1,3-dione.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application and of any patent issued thereon.

Dated: 11/11/2010

Giovanni Meazza  
Name: Giovanni Meazza